

Remarks

Claims 1-23 are in the case. All claims stand rejected under 35 U.S.C. §103 as being obvious over a combination of references that include U.S. Patent No. 6,932,388 to Few et al.

The applicant respectfully asserts that, based upon the evidence of record, as more fully explained below, including the 37 C.F.R. 1.131 Declaration previously submitted, the '388 patent to Few et al does not qualify as a prior art reference to the claims of instant application, and thus none of the respective combinations of prior art render the claims unpatentable under §103.

First, the Examiner cites the '388 patent as the only prior art reference in the respective combinations that teach many of the claim limitations, including dimples/projections, and many of the features of the trailer frame members method of attachment to each other. In other words, if the '388 patent is totally removed from use as a prior art reference, all claims should be considered allowable.

Each claim in the instant application as amended requires a dimple and/or projection in the bracket, a feature only alleged to be disclosed by the '388 patent.

The filing date of the '388 patent is November 7, 2001. Earlier in the prosecution of the instant application, the applicants submitted a Declaration under 37 C.F.R. 1.131 ("the Declaration") that established a reduction to practice of the present invention at least as early as October 25, 2001. The examiner indicated in the Office Action of February 2, 2006 that the prior Declaration was insufficient to disqualify the '388 patent as prior art for two reasons: (1)

the '388 patent has a provisional filing date of November 2000; and, (2) the Declaration included drawings that did not include dates to establish reduction to practice at least by the October 25, 2001 date. The applicants will discuss each assertion hereafter.

With regard to the '388 patent having a priority date back the provisional filing date—November 2000—the applicant respectfully asserts that nothing in the provisional application teaches, suggests, or discloses the dimple/projection feature. The applicant has included a copy of the provisional application as Appendix 1. Therefore, the dimple/projection feature of the '338 patent is only entitled to the benefit of its November 2001 nonprovisional application filing date.

With regard to the Declaration not having dates to prove completion of the invention prior to October 2001, the applicants respectfully submit that specific dates are not required to establish a completion date. MPEP 715 sets out the requirements for 37 C.F.R. 1.131 Declarations. MPEP 715.07, in Section II entitled "Establishment of Dates," states that:

If the dates of the exhibits have been removed or blocked off, the matter of dates can be taken care of in the body of the oath or declaration.

When alleging that conception or a reduction to practice occurred prior to the effective date of the reference, the dates in the oath or declaration may be the actual dates or, if the applicant or patent owner does not desire to disclose his or her actual dates, he or she may merely allege that the acts referred to occurred prior to a specified date. (emphasis added)

As such, at least the dimple/projection feature of the '338 has a priority date no earlier than the filing date of the nonprovisional application, *i.e.*, November 7, 2001. Additionally, the prior 1.131 Declaration did not require the actual dates on the drawings to establish completion of the invention. Therefore, since the applicants have already established completion of the

invention of the instant application at least as early as October 25, 2001, which is prior to the effective date of the '338 patent with regard to the dimple/projection feature, the applicants respectfully assert that '338 patent does not qualify as prior art, at least with regard to teaching the dimples/projections. As such, the applicants respectfully assert that all the claims are allowable for at least this reason.

Based on the foregoing, the applicant respectfully asserts that all claims are allowable, and requests that a timely Notice of Allowance be issued in the case.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'Ed Crooks', with a stylized flourish at the end.

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APPENDIX

COPY OF U.S. PATENT APPLICATION

SERIAL NUMBER 60/246,813

TRAILER FRAME

BACKGROUND OF THE INVENTION

5 This invention relates generally to bolt together trailer frames and more particularly to a sprung axle support for bolt together trailer frames.

10 In bolt together trailer frames, torsion axles are typically used. One typical characteristic of a bolt together trailer frame with torsion axles is side to side sway of the trailer while being towed, especially when the trailer is lightly loaded. Another characteristic is a tendency for a lightly loaded torsion axle trailer to bounce or hop on rough roads.

15 The foregoing illustrates limitations known to exist in present bolt together trailer frames. Thus, it is apparent that it would be advantageous to provide an alternative directed to overcoming one or more of the limitations set forth above. Accordingly, a suitable alternative is provided including features more fully disclosed hereinafter.

SUMMARY OF THE INVENTION

20 In one aspect of the present invention, this is accomplished by adding a sprung axle support box to a bolt together trailer frame. The support box consists of stiffeners plates added to the trailer side frame members adjacent to the sprung axle along with cross members connected to the side frame members just in front of and behind the sprung axle spring hangers.

25 The foregoing and other aspects will become apparent from the following detailed description of the invention when considered in conjunction with the accompanying drawing figures.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

30

FIG. 1 is a perspective view of a single axle trailer frame;

FIG. 2 is an enlarged perspective view of the sprung axle support box portion of the trailer frame shown in FIG. 1;

FIG. 3 is a cross-sectional view of a side member, stiffener plate and spring hanger;

FIG. 4 is a partial side view of a side member, illustrating the axle cutout and stiffener plate;

FIG. 5 is a partial side view of the trailer frame shown in FIG. 1 showing the sprung axle and spring member; and

FIG. 6 is an enlarged perspective view of the sprung axle support box portion for a double axle trailer frame.

DETAILED DESCRIPTION

FIG. 1 shows the preferred embodiment of a bolt together trailer frame 10 for use with sprung axles (shown in FIG. 5). The basic trailer frame 10 consists of a plurality of framing members attached to one another using fasteners. Two side members 20, which consist of one or more sub-members 21, are fastened to a sprung axle support box 40. For some trailer designs, two end members 24 are attached to the side members 20. Depending upon the length of the trailer frame 10, one or more cross members 26 can be connected to the side members 20 to strengthen the trailer frame 10. At the front end of the trailer frame 10, two tongue members 27 are attached to the side members 20 and the front end member 24, if present, thereby forming the trailer tongue. As needed, various side supports 29 are attached to the side members 20. These side supports 29 are used to provide support for flooring which extends beyond the side members 20 and for heavier items, such as a water heater. The sprung axle support box 40 is typically located in a center portion of the trailer frame 10. Depending upon the intended weight distribution of the trailer, the sprung axle support box 40 is typically positioned to the rear of the center of the trailer frame.

FIG. 2 shows a sprung axle support box 40 for a single axle trailer frame. FIG. 6 shows the sprung axle support box 40 for a double axle trailer frame. The sprung axle support box 40 is essentially the same for both single axle trailer frames and double axle trailer frames. The primary differences are the length of the stiffener plates 42 and the number of spring hangers 48.

The first component of the sprung axle support box is the side box 46 (shown in FIG. 3), which is formed by welding a stiffener plate 42 to the portion of the side member 20 adjacent the axle 60. In the preferred embodiment, the side member 20 is formed with a "C" shape having a vertically extending side flange or portion 20a with top 20b and bottom 20c portions extending away from the side portion 20a. The side 20a, top 20b and bottom 20c portions forming the "C" shape. The bottom portion 20c is not provided in the part of the side member 20 which forms the sprung axle support box 40, as shown in FIGS. 2 and 3. The stiffener plate 42 also has a "C" shape, being formed with a vertically extending side portion 42a and top 42b and bottom 42c portions extending away the side portion 42a and towards the side member side portion 20a. Stiffener plate 42 is preferably welded to the side member 20, whereby side member top and side portions 20b, 20a, and stiffener plate top, bottom and side portions 42b, 42c, 42a form the enclosed side box 46. In the preferred embodiment, the portion of the side member 20 adjacent the attached stiffener plate 42 includes only one sub-member 21.

The second component of the sprung axle support box 40 are the two cross members 44. The sprung axle support box cross members 44 are positioned adjacent to the spring hangers 48, with the front cross member 44 being positioned in front of the front most spring hanger 48 and the rear cross member 44 being positioned to the rear of the rear most spring hanger 48. Preferably, cross members 44 have a "C" shape like side members 20. As needed, cross members 44 can have a plurality of weight reducing cutouts 45. Preferably, stiffener plates 42 have no weight reducing cutouts. In the embodiment shown in the FIGURES, stiffener plates 42 have a plurality of small access cutouts 52 which provide access for the bolts which are used to attach side supports 29. Preferably, these access cutouts 52 are no larger than necessary to minimize the effect of cutouts 52 on the strength of stiffener plates 40.

A plurality of spring hangers 48 are attached to the sprung axle support box 40. For a single axle trailer frame, two spring hangers 48 are attached to each side member 20, as shown in FIG. 2. For a double axle trailer frame, three spring hangers 48 are attached to each side member 20, as shown in FIG. 6. Spring members 62 are attached to the spring hangers 48 as shown in FIG. 5. Each spring member 62 typically consists of several leaf springs attached together. An axle 60 is attached to the middle of a spring member 62. The spring hangers 48 are preferably welded to the bottom portion 42c of the stiffener plate 42. Also, preferably, the spring members 62 are attached to the spring hangers 48 by fasteners, which extend through both

side of the spring hangers 48 and adjacent the side member 20. If needed, the spring hanger 48 could also be welded to the side member 20.

As shown in FIG. 4, an axle cutout 50 is provided in each side member 20 for each axle
5 60. Preferably, the bottom portion 42c of the stiffener plate 42 does not extend below the uppermost point 50a of the axle cutout 50.

Having described the invention, what is claimed is:

- 1 1. A bolt together trailer frame comprising:
2 a first side member;
3 a second side member;
4 a sprung axle support box connected to the first and second side members, the
5 sprung axle support box comprising: each side member having a longitudinally extend-
6 ing stiffener plate attached thereto; and two cross members connectedly attached to the
7 side members, each cross member being attached proximate an end of a stiffener plate;
8 a plurality of spring hangers fixedly attached to the sprung axle support box; and
9 at least one sprung axle unit attached to the spring hangers, each sprung axle
10 unit comprising: two spring members, the spring members being attached to the spring
11 hangers; and an axle attached to the spring members,
12 the first side member, the second side member and the sprung axle support box
13 cross members being connected by fasteners.
- 1 2. The trailer frame according to claim 1, further comprising:
2 at least one frame cross member connected to the side members.
- 1 3. The trailer frame according to claim 1, wherein each stiffener plate is welded to a
2 side member.
- 1 4. The trailer frame according to claim 1, wherein the side members have a verti-
2 cally extending side portion and a top portion extending at a 90° angle away from a top
3 edge of the side portion.
- 1 5. The trailer frame according to claim 4, wherein the stiffener plates have a verti-
2 cally extending side portion and top and bottom portions extending at a 90° angle away
3 from top and bottom edges of the side portion, the top and bottom portions extending in
4 the same direction whereby the top, bottom and side portions form a C shape, the stiff-
5 ener plate top and bottom portions extending towards the side member side portion
6 thereby forming an enclosed space having top, bottom and two sides.

1 6 The trailer frame according to claim 5, wherein the vertical height of the side
2 member side portion is greater than the vertical height of the stiffener plate side portion.

1 7. The trailer frame according to claim 5, wherein the spring hangers are attached
2 to the stiffener plate bottom portion.

1 8. The trailer frame according to claim 7, wherein the spring hangers are welded to
2 the stiffener plate bottom portion.

1 9. The trailer frame according to claim 1, wherein each side member is formed of a
2 plurality of sub-members, a sub-member being connected to an adjacent sub-member
3 by bolts.

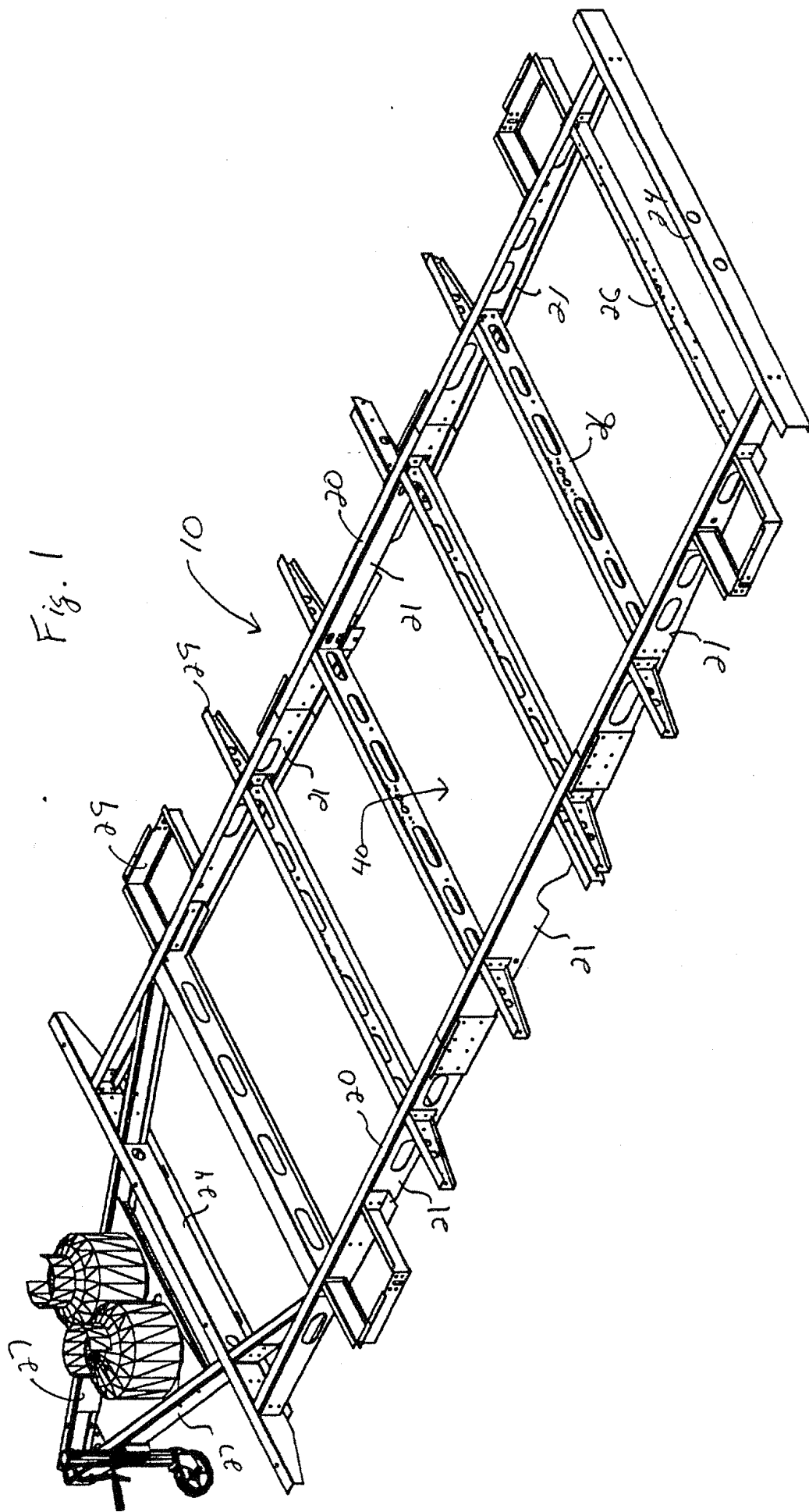
1 10. The trailer frame according to claim 9, wherein the portion of a side member
2 having the attached stiffener plate includes only one sub-member.

1 11. The trailer frame according to claim 1, wherein each side member has an axle
2 cutout proximate the axle, the lowermost extent of the stiffener plate not extending below
3 the uppermost extent of the axle cutout.

1 12. The trailer frame according to claim 1, wherein the length of the stiffener plate is
2 less than the length of the side member.

1 13. The trailer frame according to claim 1, wherein the spring members are attached
2 to the spring hanger by fasteners, the fasteners extending through the adjacent side
3 member.

1 14. The trailer frame according to claim 1, further comprising:
2 two end members connected to ends of the first and second side members.



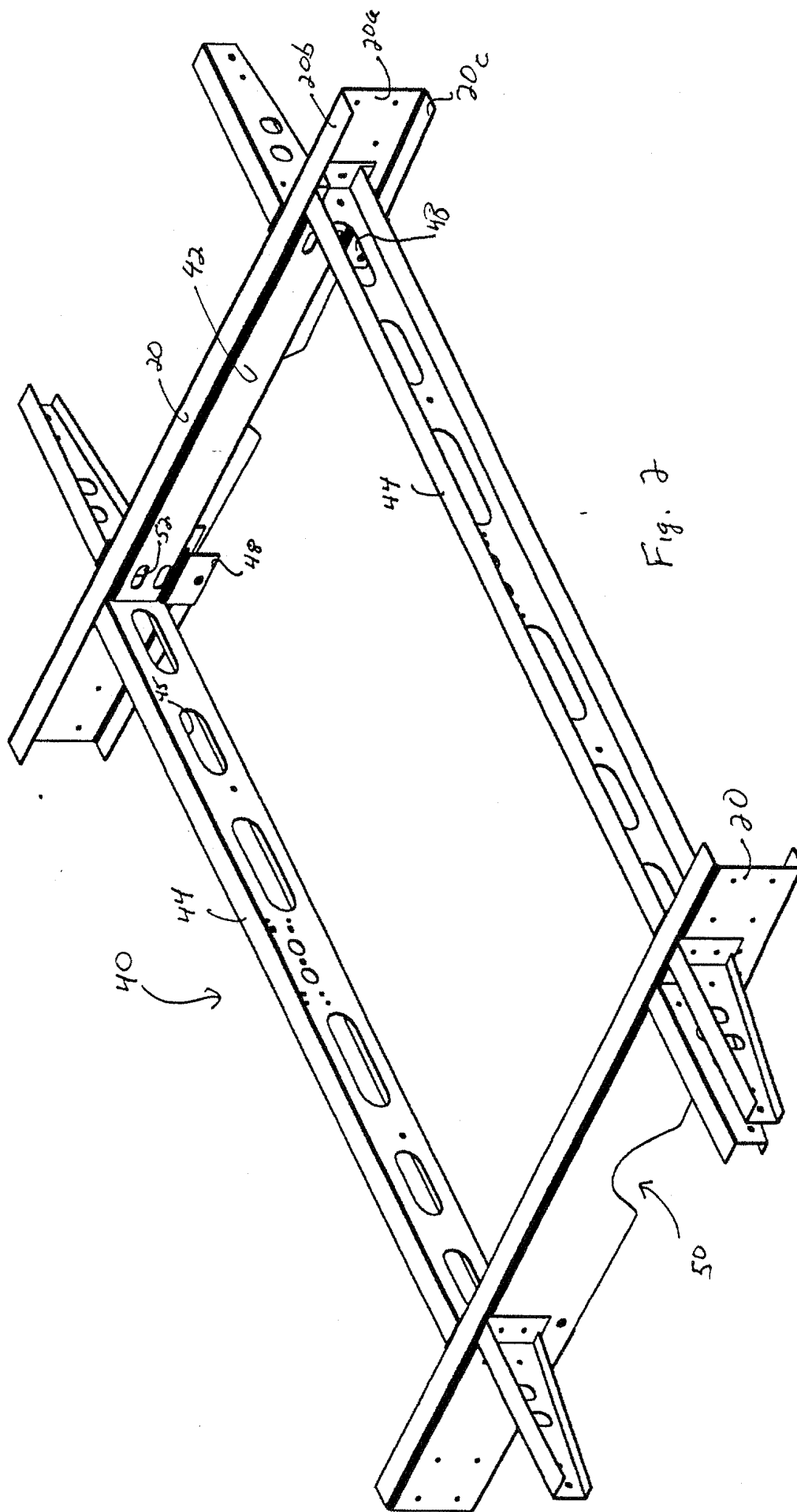


Fig. 2

Fig. 3

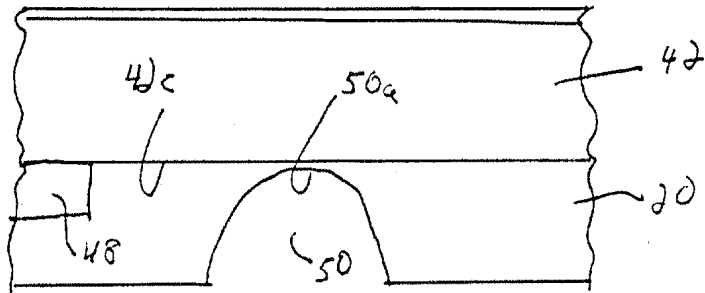
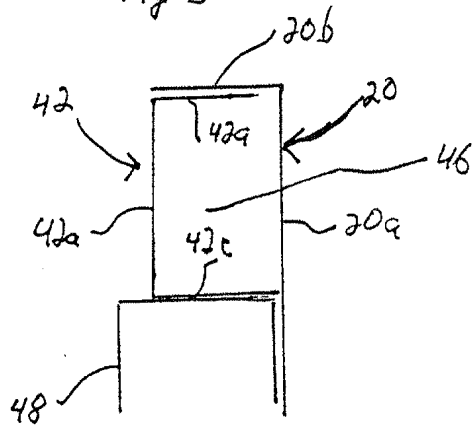


Fig. 4

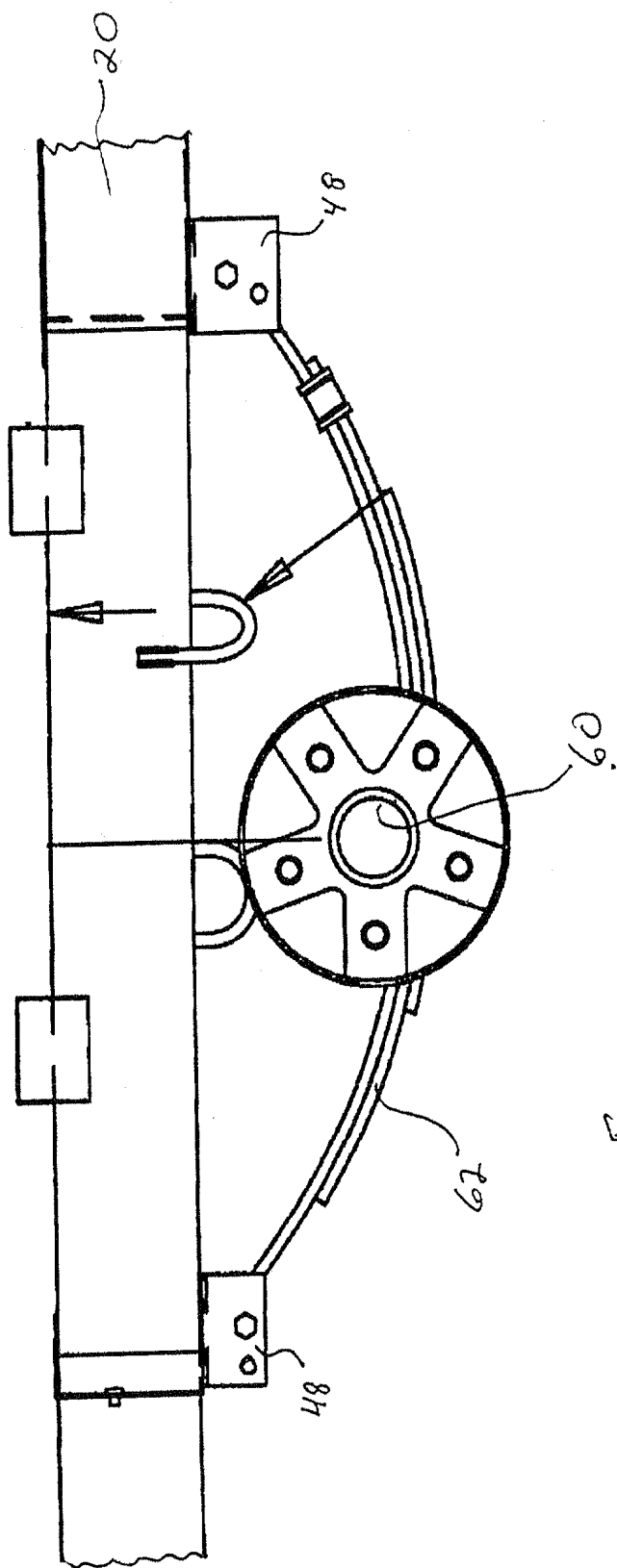


Fig. 5

